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ABSTRACT

Recent research indicates the centrality of "attending" as a variable in reading acquisition. Attending is, in fact, more important than such traditionally accepted influences as intelligence, cognitive style, attitudes, and language background. Differences in attending behavior, which are molded through match and mismatch of expectations with reality, through maternal direction, through book experience, and through television viewing, related causatively to reading performance. Distractions within the child, within the reading, and within the classroom environment can militate against appropriate attending. Teachers must be aware of the factors which influence attending behavior, in order to combat reading failure. (Author/KS)

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ATTEND TO READ

A paper to be delivered at the 6th I.R.A. World Congress, Singapore August 1976.

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When a child attends to elements in a particular situation he is involving his whole body both mentally and physiologically. Changes can be measured and recorded in heart rate, galvanic skin response, brain rhythmn patterns, pupillary dilation and blood pressure. In a classroom setting however, a teacher's main source of knowledge of attending or non attending comes almost solely from visual orientation. As this is only one of the characteristics of attention and does not necessarily reflect inner processes it is better perhaps to speak of it as observable attending behaviour rather than attending.

Over recent years considerable evidence has accrued which highlights the crucial importance of attending behaviour as a central variable in the learning process. Relating this evidence to the field of reading specifically is the work of Denney (6), who in a study of second through fith graders compared good and poor readers on three cognitive style dimensions. The first cognitive measure was that of conceptual style preference. Preferences, previously identified (9) and used here, were for analytic, relational and inferential conceptualization. Previous work (9) suggests that elementary school children change with increasing age through relational to analytic and inferential conceptualization and obviously analytical abilities would be utilized in phonic and structural analysis in reading while the inferential dimension could be advantageous in unlocking new words through context.

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The second dimension was that of cognitive tempo; an ability to be able to inhibit responses and reflect upon their accuracy. Again developmental studies suggest a change from impulsive to reflective with age and consequently increasing facility for contextual analysis.

The third and final dimension, attentional style, relates to a child's ability to deploy his attention selectively and avoid distractions; the two polar constructs in this case being constriction and flexibility which similarly develop along the continuum with increasing age. (16)

Results of Denney's (16) research indicate that the first two dimensions, conceptual style preference and cognitive tempo, fail to distinguish between good and poor readers, except that the conceptual style preference did show some tendency to differentiate at the 5th grade level only. The significant finding was that substantial differences were found between good and poor readers at all levels in attentional style.

Denney's findings gain support from the Zeaman & House (22) classic experiment with retardate learners. In this experiment the subjects had difficulty in selecting appropriate foci for their attention in early learning trials but once a correct focus was obtained learning curves paralleled those found in normal learners. Staats, Brewer and Gross (19) also point out that the direction of attention in early learning trials is a crucial factor affecting the shape of learning curves for good and poor readers. Lahaderne (10) cites data to demonstrate that attention is

unrelated to attitudinal factors and that even when intelligence is partialled out a positive correlation between reading performance and attention still remains.

These experiments should serve to alert teachers to the influence of attention as a key variable in the acquisition of reading skills. Learning to read is more dependent on appropriate pupil attention repertoires than it is on cognitive styles, attitudes or general language ability. Teachers, as a matter of habit causatively relate reading acquisition to intellectual levels, socio-economic factors, early book experience and other variables but seldom view it as a function of learned attending behaviours. The development of a child's attending behaviour is parallel to and an integral part of his total cognitive development. It occurs as a result of learning and in fact may be conceived of as a mediating variable operating between experience and knowledge attainment, and thus affects further learning.

Attending behaviour is moulded and patterned in preschool years through match and mismatch of expectations with reality, through maternal control and direction, through book experience and in more recent years through television viewing with its language channelling effects.

Of maternal control and direction Staats (18) says, "it is important, if further learning is to be effected in many different training circumstances, that certain stimuli have come to more strongly control attentional responses than do other stimuli. For example, one of the things that must occur for the child if he is to learn well in school is that certain

auditory stimuli must have to come to strongly control his behaviour. At a basic level the sound of the human voice must become a stimulus that controls strongly 'stopping and listening'. Vocally produced stimuli must gain s rong control over the behaviour of the child in 'competition' with other auditory stimuli as well as stimuli of other kinds". As experienced teachers know, there can be marked differences among new entrants in the extent to which their attention is able to be controlled and directed by a teacher's voice. If a child in the home finds that nothing important, interesting or rewarding occurs when he attends to his mother's voice he quickly learns that he need not attend. The child whose early learning has been in this direction can provide a most frustrating experience for his first teacher. Thus it can be the case that a child must be taught to attend to the teacher's directions before he can profitably commence formal reading instruction.

Television has undoubtedly made an impact on the cognitive development of our children. In the field of reading there are many parents and teachers who speak of children who have learned a simple sight word repertoire, commercially biassed though it may be, through their viewing habits. Torrey (20) in documenting one of these cases has the following to say.

"One known source of instruction remains television commercials. It has already been mentioned that John watched and memorized them. Commercials are frequently repeated, so that whatever a child fails to learn in one showing can be drilled ad nauseum in subsequent days and weeks. Commercials are designed to get attention, so they are usually loud, lively and simple. Memorizing of short sentences is facilitated

by catchy tunes. Many unknown words are shown and the unfamiliar brand names are usually short or easy to pronounce. It seems possible that from commercials a child could get a start on a basic sight vocabulary and make a few inferences about phonics, extend his reading knowledge through phonics, use the redundancy of language in simple books, ask occasional questions and be corrected by an adult".

Mounting evidence clearly indicates that differences, both quantitative and qualitative, exist between the attending behaviour of good readers and the attending behaviour of poor readers. In my own recent research (8) with 6 year olds, high reading achievers spent an average of 82.1% of their time attending in a tightly structured reading situation while low achievers averaged 73.9%. Samuels & Turnure (15) found, at the same age, a correlation of .44 between attention and word recognition, Cobb (5) reports a .45 correlation between attention and reading achievement at fourth grade, while Lahaderne (10) at a sixth grade level similarly finds a range from .51 to .39.

Qualitative differences are less easy to document but Denney (6) suggests that the poor readers' difficulties lie not in the total amount of time they spend attending or non attending but in the proportion of their attending time "spent productively examining the relevant stimuli in their visual field". Willows (21) finds that poorer readers are unabble to ignore adjacent but obviously irrelevant cues in their reading and appear to "focus most of their processing capacity on the visual aspects of the display" while the better readers "are able to concentrate their processing capacity on extraction of meaning". This difference in focal

context that Willows (21) work implies may simply be a function of the different levels of reading ability that the two groups have attained or it may be the result of entirely different patterns of attending behaviours developed as a result of preschool linguistic experience. My preference would be for the latter explanation. Even from the child's first weeks at school there are differences which distinguish more proficient readers from the less proficient. For example, Goodman (3) demonstrates that while better readers do not necessarily make fewer mistakes or miscues, they make a different type of mistake. Their mistakes may be quite extreme visually but sensible contextually. In contrast the less proficient group makes mistakes which reflect more visual information e.g. initial and or final sounds, but which make little sense in the passage.

It behoves teachers then to be aware of what cues are appropriate focal points for the reader's attention and what are inappropriate. Goodman (17) speaks of four cues systems within reading; cues within words, cues in the flow of language, cues within the reader and cues external to language and the reader. Of these, ultimately the most important cue system is that embedded in the flow of language itself - the meaning or context of the passage. In one research project carried out in New Zealand (4) one third of children beginning school did not know whether the print or the pictures contained the story and after six months at school 10% still displayed confusion in this matter. In my experience of trialling the prototypes of infant books I am constantly finding children of seven and eight years of age who do not realize that they can actually gain information from reading.

The importance and potency of context clues is demonstrated by Goodmans (7) finding that, "first grade children were able to read two thirds of the words they had missed on a list when these same words occured in a story. Second graders read three fourths of their errors correctly in a story context and third graders got more than four out of five right in the stories".

Young readers, to be successful, must constantly relate cues from within themselves to cues within the flow of language and cues within words. But even allowing for the on-going importance of cues within the flow of language, "No curriculum for teaching reading can be complete that neglects any of the cue systems" (17). For some words in some context meaning is of little assistance in the unlocking process and Goodman's "cues within words" system must come into operation. Marchbanks and Levin (13) find that for isolated words, the first letter is the most salient cue and the last letter the second most important. It may be also that different types or combinations of cues are more useful for different types of words. For example, words which have referent objects, actions or characteristics in reality, lend themselves more readily to contextual systems of solution, while words which do not have referents in reality often require phonic analysis or learning by repetition. It is certainly true that the bulk of any sight word list is in the non referent category. Again some words are recognized as having been previously met in print while others have to be recalled from reservoires of auditory experience and matched with the printed form. We know very little about which cue systems operate in these two situations, just as we do not know whether the salient cues in fiction are equally appropriate in non fiction.

Reading development is a life long process. Even prior to school entry there are experiences which are important for the later acquisition of reading skills and similarly even superior adults are constantly improving and refining their skills. Relevant foci for attention are also changing with age and experience and it is thus important that teachers realise that some instructional emphases such as recognition skills are important only at a particular stage and that anticipation and discrimination are ultimately more essential. Success in reading is successful prediction. Once a quorum of sight words becomes established and basic phonic patterns accepted, unless meaning and successful prediction give reward, progress ceases and interest stagnates.

Besides a knowledge of what are appropriate cues for the young reader to focus his attention on, it is also important that teachers are aware that some factors may act as distractors of and competitors for a child's attention. For example, Samuels (14) finds that poor readers are often distracted by adjacent pictures. In a recent pilot study McCrae (12) confirms this and suggests that for children thus distracted not only an absence of pictures but also that a coloured border placed around the print on a page tends to improve attention. The coloured border appears to give the passage a kind of perceptual closure and contains the gaze of a young reader. A further extension of this concept is for the teacher to actually draw a small coloured 'box' around a word which is causing difficulty. Again this appears to centre the attention and if context is important in the particular case a further larger 'box' can be drawn around the sentence containing the word. The

figure (word) is vividly sharpened against the contextual ground (sentence) and the pupil is able to ignore distracting adjacent print. It is interesting to further speculate on which colours should be employed for this purpose. McAlpine's work (11) on the emotional feelings that children (4 year olds) associate with colours, shows that black signifies danger, red, orange and yellow suggest happiness while greys, blues and browns are associated with unhappiness. Red is also seen as a fast exciting colour. Perhaps the 'box' enclosing the sentence could be red and the 'box' enclosing the word could be yellow or orange?

How can teachers become aware of attentional deficits in their children? Apart from gradually training their own attending behaviours, the best technique to employ is the miscue analysis. This procedure systematizes the process of diagnosis and allows for a regular monitoring of attentional and other deficits. Behind every mistake or miscue there is a reason and the reason may be that the child does not know which cues are important for the word or sequence that he is attempting. Patterns of attentional deficits can then be dealt with in instructional sessions. Granted that better attending leads indirectly to its own reward in more successful reading, evidence does show that attending behaviour can be improved directly. Begg (1) for example, documents one hundred per cent improvement in attending by applying rewards of 'free time', while Broden (2) finds that increased teacher attention to a pupil not only increases the pupils attending time but also that of adjacent pupils.

Recent research highlights the centrality of the attending variable in reading acquisition. It is more important than other traditionally accepted variables such as intelligence, cognitive styles attitudes and language background. There are attentional differences, quantitative and qualitative, from child to child, which relate causatively to reading performance. There are distractions within the child, within the reading and within the classroom interactions which militate against appropriate attending. Knowledge is a weapon and teacher knowledge of attention is a weapon against reading failure.

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